

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

- 1 1. (Previously presented) A micro electromechanical systems (MEMS)
2 device comprising:
3 a scanning probe microscopy (SPM) component;
4 one or more fluidic channels formed in the SPM component;
5 one or more control valves to control a flow of fluid in the one or more fluidic
6 channels; and
7 one or more movable members formed in the SPM component, at least one fluidic
8 channel being formed in each movable member, wherein fluid flow through the at least one
9 fluidic channel produces movement in the movable member.
- 1 2. (Currently amended) A method for nanomachining using ~~the a~~ MEMS
2 device, ~~the MEMs device comprising: of claim 1.~~
3 a scanning probe microscopy (SPM) component;
4 one or more fluidic channels formed in the SPM component;
5 one or more control valves to control a flow of fluid in the one or more fluidic
6 channels; and
7 one or more movable members formed in the SPM component, at least one fluidic
8 channel being formed in each movable member, wherein fluid flow through the at least one
9 fluidic channel produces movement in the movable member.
- 1 3. (Previously presented) A micro electromechanical systems (MEMS)
2 device comprising:
3 a scanning probe microscopy (SPM) component;

4 at least one fluidic channel formed in the SPM component; and
5 a venturi tube formed along a portion of the fluidic channel,
6 wherein a vacuum can be developed by a flow of a gas or fluid through the
7 venturi tube.

1 4. (Currently amended) A micro electromechanical systems (MEMS) device
2 comprising:

3 a scanning probe microscopy (SPM) component;
4 one or more movable members formed in the SPM component;
5 a fluidic channel formed in a first movable member, the fluidic channel
6 configured to deliver fluid to a tip of the SPM component;
7 one or more control valves formed in the SPM component to control a flow of
8 fluid in the fluidic channel; and
9 an amount of an isotope disposed along the fluidic channel,
10 wherein the particles emitted by the isotope can be delivered by a fluid flowing in
11 the fluidic channel to the tip to affect the charge distribution in a region about the tip.

1 5. (Currently amended) A method for performing nanomachining on a
2 workpiece using ~~the~~ a MEMs device, the MEMs device comprising:

3 a scanning probe microscopy (SPM) component;
4 one or more movable members formed in the SPM component;
5 a fluidic channel formed in a first movable member, the fluidic channel
6 configured to deliver fluid to a tip of the SPM component;
7 one or more control valves formed in the SPM component to control a flow of
8 fluid in the fluidic channel; and
9 an amount of an isotope disposed along the fluidic channel,

10 wherein particles emitted by the isotope can be delivered by a fluid flowing in the
11 fluidic channel to the tip to affect charge distribution in a region about the tip, of claim 4 wherein
12 the particles are delivered to the tip.

6 - 7. (Canceled)

1 8. (Previously presented) The MEMS device as recited in claim 4 wherein
2 the isotope is Americium 241.

1 9. (Original) The MEMS device as recited in claim 4 wherein the amount of
2 isotope is disposed in a single isotopic region on the SPM device, wherein the single isotopic
3 region contains 1 microcurie or less of radioactivity.

10 - 25. (Canceled)

1 26. (Currently amended) A method of performing a nanomachining operation
2 comprising manipulating a device ~~as recited in claim 4~~ relative to a surface, including
3 constraining motion of the device in a specific or constrained region,
4 the device comprising:
5 a scanning probe microscopy (SPM) component;
6 one or more movable members formed in the SPM component;
7 a fluidic channel formed in a first movable member, the fluidic channel
8 configured to deliver fluid to a tip of the SPM component;
9 one or more control valves formed in the SPM component to control a
10 flow of fluid in the fluidic channel; and
11 an amount of an isotope disposed along the fluidic channel,
12 wherein particles emitted by the isotope can be delivered by a fluid
13 flowing in the fluidic channel to the tip to affect charge distribution in a region about the
14 tip.

1 27. (Previously presented) A method as in 26 in which the nanomachining
2 operation uses chemical or biological chips or devices in which material therefore is placed in
3 wells in a regular arrangement on a plane or surface(s).

1 28. (Previously presented) A method as in 27 in which the material is DNA
2 which has been marked optically, electrically or chemically so as to interact with optical,
3 electrical or chemical detectors or emitters associated with or integrated in the device.

29. - 37. (Canceled)

1 38. ((Previously presented)) The MEMS device of claim 1 further comprising
2 a cantilever formed in the SPM component and operatively coupled to the moveable members,
3 wherein movement in the movable members serves to move the cantilever.

39 - 40. (Canceled)

1 41. (Previously presented) The MEMS device of claim 4 wherein the fluid
2 flow comprises one of moving fluid from the fluidic channel formed in the first moveable
3 member to create at least a partial vacuum thereby effecting movement of the first moveable
4 member and moving fluid into the fluidic channel formed in the first moveable member wherein
5 a force of the fluid effects movement of the first moveable member.

1 42. (Previously presented) The MEMS device of claim 4 wherein fluid flow
2 through the at least one fluidic channel produces movement in the first movable member.

1 43. (Previously presented) The MEMS device of claim 42 further comprising
2 a cantilever formed in the SPM component and operatively coupled to the moveable members,
3 wherein a fluidic channel is formed in each moveable member, wherein movement in the
4 movable members serves to move the cantilever.

1 44. (Previously presented) The MEMS device as recited in claim 4 wherein
2 the moveable members act as passive elements.

1 45. (Previously presented) The MEMS device as recited in claim 4 wherein
2 the moveable members produce electrical signals during movement, wherein the electrical
3 signals serve to control subsequent movements.

1 46. (Previously presented) The MEMS device as recited in claim 45 wherein
2 the electrical signals serve to obtain one of a predetermined motion of a first moveable member,
3 a predetermined displacement of the first moveable member, a zero displacement position of the
4 first moveable member.

1 47. (Previously presented) The MEMS device as recited in claim 4 further
2 comprising a circuit for monitoring changes in charge accumulation in the fluidic channel as the
3 isotope is moved by fluid flow.

1 48. (Currently amended) A method for nanoelectric discharge machining
2 using ~~the a~~ MEMS device as recited in claim 4, the method comprising imaging a surface to be
3 machined and measuring surface features of the surface to be machined, the imaging and
4 measuring being performed using a scanning probe microscopy technique

5 the MEMs device comprising:

6 a scanning probe microscopy (SPM) component;

7 one or more movable members formed in the SPM component;

8 a fluidic channel formed in a first movable member, the fluidic channel

9 configured to deliver fluid to a tip of the SPM component;

10 one or more control valves formed in the SPM component to control a
11 flow of fluid in the fluidic channel; and

12 an amount of an isotope disposed along the fluidic channel,

13 wherein particles emitted by the isotope can be delivered by a fluid
14 flowing in the fluidic channel to the tip to affect charge distribution in a region about the
15 tip.

49 - 58. (Canceled)

1 59. (Previously presented) A micro electromechanical systems (MEMS)
2 device comprising:
3 a scanning probe microscopy (SPM) component;
4 a fluidic channel formed in the SPM component, the fluidic channel configured to
5 deliver fluid to a tip of the SPM component;
6 an amount of an isotope disposed along the fluidic channel, wherein the particles
7 emitted by the isotope can be delivered by a fluid flowing in the fluidic channel to the tip to
8 affect the charge distribution in a region about the tip; and
9 a circuit for monitoring changes in charge accumulation in the fluidic channel as
10 the isotope is moved by a flow of fluid.